

ARCOS – Producer Guide

1. Purpose of this Guide

This guide explains the role of the Producer in ARCOS (AI Rule-Constrained Orchestration System). It is written for developers, clarifying that the Producer is a process with defined boundaries. Developers can implement it however they wish, provided that schema-based communication protocols are respected. The Producer must handle specific inputs and produce specific outputs, but internal design is entirely flexible.

2. Role in ARCOS

The Producer is responsible for generating concrete outputs (e.g., code, configurations, data files) from project specifications and domain rules.

3. Responsibilities

- Transform validated project and domain specifications into tangible artifacts.
- Return either an Output (encoded as base64 with checksum) or a request for clarification if inputs are insufficient.
- Work with domain-specific schemas to ensure outputs align with expectations.

4. Workflow

1. Receive `ProducerRequest` from the Orchestrator.
2. Check inputs (Project Spec, Domain Schema, Rules, original files of the `output.zip`, mentioned in the validator or post processor reports).
3. Generate outputs (e.g., code, packaged as `Output.zip`).
4. Return `ProducerResponse.xml` with Output or Clarification.

5. Inputs and Outputs

- Inputs: Project Spec, Domain Schema, Custom Rules, Predefined Rules, original files of the `output.zip`, mentioned in the validator or post processor reports.
- Outputs: `ProducerResponse.xml` (Output or Clarification), including checksums and optional packaging.

6. Example (BLEU Inventory Domain)

In the BLEU domain, the Producer receives BLEU inventory rules and schema, then generates a Rust CRUD interface. It returns this packaged as `Output.zip` with a checksum.

7. Benefits for Developers

- Freedom to use any language or toolchain to generate outputs.
- Flexible internal design, only the schema contracts matter.
- Domain-specific freedom: teams may decide their own internal report formats when implementing all agents together.

8. Conclusion

The Producer is a well-defined ARCOS component: it operates within schema-constrained boundaries, while giving developers freedom of implementation. By respecting the communication contracts, developers ensure that their {title} agent integrates seamlessly into ARCOS flows.